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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,189

09/10/2003

Paul Pfaff

3883.0005

5764

7590

10/27/2005

Timothy A. Long
Suite 1600
601 SW Second Ave.
Portland, OR 97204-3157

EXAMINER

NGUYEN, TRUNG Q

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Supplemental
Notice of Allowability**

Application No.

10/660,189

Examiner

Trung Q. Nguyen

Applicant(s)

PFAFF ET AL.

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/27/05.
2. ☒ The allowed claim(s) is/are 2.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. The application has been amended as follows: on page 80 of the specification submitted on 9/10/03, the equation (84) appears to be misplaced. The term (84) on page 80 has been moved next to the equation of $U(X_i, Y_i)$. All claim(s) remain unchanged.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Trung Nguyen** whose telephone number is **(571) 272-1966**. The examiner can normally be reached on Monday through Friday, 8:30AM – 5:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RAMIREZ NESTOR** can be reached at **(571)-272-2034**.

Trung Nguyen
Patent Examiner
Group Art Unit 2829
October 24, 2005


NESTOR RAMIREZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

This method of encoding the phase works, by a rectangular opening ($a \times b$) in an opaque sheet (the hologram) centered on the origin of the coordinates, as shown on Figure 20(a), and illuminated with a uniform coherent polarized beam of light of unit amplitude. The complex amplitude $U(x_i, y_i)$ at a point (x_i, y_i) in the diffraction pattern formed in the far field is given by the Fourier transform of the transmitted amplitude and is

$$U(x_i, y_i) = a \cdot b \cdot \text{sinc}\left(\frac{a \cdot x_i}{\lambda z}\right) \cdot \text{sinc}\left(\frac{b \cdot y_i}{\lambda z}\right)$$

Illustration showing the configuration of the cells in a binary detour-phase hologram shown in FIG 39. The positions of the cells are calculated in accordance to equations (84), (85) and (86);

(84)

where:

$$\text{sinc}(x) := \frac{\sin \pi \cdot x}{\pi \cdot x} \quad (85)$$

We now assume that the center of the rectangular opening is shifted to a point $(\Delta x_0, \Delta y_0)$ and the sheet is illuminated by a plane wave incident at an angle. If the complex amplitude of the incident wave at the sheet is $\exp[i(\alpha \Delta x_0 + \beta \Delta y_0)]$, the complex amplitude of the diffraction pattern becomes: